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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/023,689	12/21/2001	Makoto Ogusu	684.3303	6963

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EXAMINER

LAVARIAS, ARNÉL C

ART UNIT PAPER NUMBER

2872

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/023,689

Applicant(s)

OGUSU ET AL.

Examiner

Arnel C. Lavarias

Art Unit

2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/21/01, 4/15/02, 7/14/03.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) 1-3 and 17-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-16 and 31-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 December 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Invention IV, Species A, Claims 7-15, in Paper No. 8, dated 7/14/03, is acknowledged. The traversal is on the ground(s) that Inventions II and III are merely species generically recited in Invention I. This is not found persuasive because neither Invention II nor Invention III specifically recite processes that particularly prevent a taper shape from being transferred to the substrate, such as generically recited in Invention I, and that Invention I recites a generic means for preventing a taper shape from being transferred to the substrate, which neither Invention II nor Invention III necessarily does.

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-3, 17-30 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected inventions and species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in Paper No. 8, dated 7/14/03.

Response to Amendment

3. The amendments to Claims 11-12, 16, 31, and 32 in Paper No. 4, dated 12/21/01, are acknowledged and accepted.
4. The amendments to Claims 7, 11, 13, 16, 25, 29, 31-32 in Paper No. 8, dated 7/14/03, are acknowledged and accepted.

Drawings

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description:

Figures 1 and 2- Reference numeral 9

Figure 4B- Reference numeral 12.

A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “11” has been used to designate both anti-reflection coating (Figure 3C and resist coating (Figure 6A). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
7. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “12” has been used to designate both prism (Figure 4B) and resist pattern (Figure 6B). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

8. The disclosure is objected to because of the following informalities:

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Page 8, line 8- "WCRT". The full, unabbreviated word or phrase must be included the first time an abbreviation is used.

Page 26, line 17- '8' should read '2'

Page 32, line 9- '1' should read '10'

Page 34, line 5- 'ration' should read 'ratio'

Page 40, line 20- "ZP". The full, unabbreviated word or phrase must be included the first time an abbreviation is used.

Page 41, line 17- 'coping' should read 'copying'.

Appropriate correction is required.

9. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

10. The abstract of the disclosure is objected to because of the following informality:

Abstract, line 2- 'Disclosed is a' should read 'A'.

Correction is required. See MPEP § 608.01(b).

Claim Objections

11. Claims 7-12 are objected to because of the following informalities:

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Claim 7 recites the limitation "processing region" in line 6. There is insufficient antecedent basis for this limitation in the claim, in that it is unclear which processing region (See Claim 7, lines 3 and 5) is being referred to. Claims 8-12 are dependent on Claim 7, and hence inherit the deficiencies of Claim 7.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claims 4-16, 31-37 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 4 provides for the use of a first mask and a second mask in the method of manufacturing a diffractive optical element, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any *active, positive steps* delimiting how this use is actually practiced. Claims 5-16, 31-37 are dependent on Claim 4, and hence inherit the deficiencies of Claim 4.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

15. Claims 4-16, 31-37, as best understood, are rejected under 35 U.S.C. 102(e) as being anticipated by Iwasaki et al. (U.S. Patent No. 6475704).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

Iwasaki et al. discloses a method of manufacturing a diffractive optical element (See for example Figures 1, 2, or 8) by transferring a mask pattern to a workpiece, characterized in that a shape of a vertical portion of the diffractive optical element is defined by use of a first mask (See for example 22, 25 in Figure 1) and that a shape of a slant portion (It is noted that the slant portion is taken as the slope of the staircase shape of a particular groove of the diffractive optical element, e.g. as shown in Figure 1(10)) of the diffractive optical element is defined by a second mask (See for example 26 or 28 in Figure 1) and in a processing region determined by the first mask. Iwasaki et al. additionally discloses the shape of the vertical portion of the diffractive optical element being defined by transferring an edge portion of the first mask (See for example Figure 1(2)); the processing region being a region determined by transferring the edge portion of

the first mask (See for example Figure 1(5) or 1(7); the first mask being made of a first and second materials (See 22, 25 in Figure 1; col. 4, line 46-col. 5, line 27; col. 6, lines 14-23; Claim 4) such as aluminum or chromium or nitride-based material, wherein, after a processing region determined by the first material is processed, the processing region is covered by the second material and, subsequently, the first material is removed and, while using that portion as a processing region, the processing region determined by the first material is replaced by the second material to cause inversion of the processing region (See for example Figure 1); one of the first and second materials comprising a dual-layer having a chromium oxide film and a chromium film (See for example col. 8, lines 44-62); the inversion of the processing region being based on etch-back (See col. 4, line 46-col. 5, line 27; Claim 2); the second mask being a resist (See for example 26 or 28 in Figure 1; col. 4, line 46-col. 5, lines 27); and light being transmitted through the workpiece (See for example Figure 8). Iwasaki et al. additionally discloses a mold, diffractive optical element, optical instrument and exposure apparatus with the diffractive optical element, and device manufacturing method and device manufactured in accordance with the method (See for example Figures 1, 2, 5-11; col. 7, lines 30-45; col. 7, line 64-col. 11, line 25).

Conclusion

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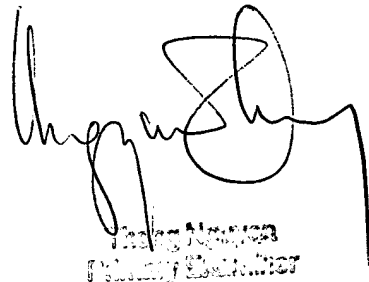
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 703-305-4007. The examiner can normally be reached on M-F 8:30 AM - 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 703-305-0024. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1782.



Arnel C. Lavarias
8/22/03



Drew Dunn
Supervisor